

IN THE CLAIMS:

This listing of claims replaces those previously filed in this application.

Claim 1 (currently amended): A plasma processing system comprising:

a chamber for housing therein a substrate to be processed;

first and second electrodes provided in said chamber so as to face each other, said first electrode having a first surface, and a second surface that is opposite to said first surface and that faces said second electrode;

a high frequency electric power supply for supplying a high frequency electric power to said first electrode via a matching unit;

a feeding member for feeding said high frequency electric power from said high frequency electric power supply through a feeding position to said first surface of said first electrode ,the feeding position being a single position with respect to the first surface;

a moving mechanism for moving the feeding position of said feeding member;

evacuation means for maintaining the interior of said chamber in a predetermined reduced pressure state; and

process gas feed means for feeding a process gas into said chamber,

wherein said process gas is activated as plasma by said high frequency electric power to carry out a plasma processing; and

wherein said moving mechanism substantially moves the feeding position of said feeding member on a circumference of a predetermined radius, which is concentric with said first electrode, on the first surface of said first electrode.

Claim 2 (cancelled)

Claim 3 (withdrawn): A plasma processing system comprising:

- a chamber for housing therein a substrate to be processed;
- first and second electrodes which are provided in said chamber so as to face each other;

- a high frequency electric power supply for supplying a high frequency electric power to said first electrode via a matching unit;

- feeding means for feeding said high frequency electric power from said high frequency electric power supply to the opposite surface to a surface of said first electrode facing said second electrode;

- evacuation means for maintaining the interior of said chamber in a predetermined reduced pressure state; and

- process gas feed means for feeding a process gas into said chamber,

- wherein said feeding means comprises:

- a feeder plate which is provided so as to be spaced from the opposite surface to the surface of said first electrode facing said second electrode;

- a feeding member for feeding said high frequency electric power from said high frequency electric power supply to said first electrode, said feeding member being connected to said feeder plate at a position which is radially shifted from a position corresponding to the center of the opposite surface to the surface of said first electrode facing said second electrode; and

- a rotating mechanism for rotating said feeder plate to rotate the feeding position of said feeding member on the feeding plane of said first electrode,

wherein said process gas is activated as plasma by said high frequency electric power to carry out a plasma processing.

Claim 4 (withdrawn): A plasma processing system as set forth in claim 3, wherein said feeding position moves on a circumference of a predetermined radius, which is concentric with said first electrode, on the opposite surface to the surface of said first electrode facing said second electrode.

Claim 5 (withdrawn): A plasma processing system as set forth in claim 3, wherein said feeding position rotates at a rotational frequency of 20 rpm or more.

Claim 6 (withdrawn): A plasma processing system as set forth in claim 3, wherein said high frequency electric power supply is connected to said feeding member via mercury.

Claim 7 (withdrawn): A plasma processing system as set forth in claim 3, wherein the electrostatic capacitance of an electrostatic coupling formed by said first electrode and said feeder plate is greater than the electrostatic capacitance which is formed in said matching unit in series to said feeding member.

Claim 8 (original): A plasma processing system comprising:

- a chamber for housing therein a substrate to be processed;
- first and second electrodes which are provided in said chamber so as to face each other;

a high frequency electric power supply for supplying a high frequency electric power to said first electrode via a matching unit;

feeding means for feeding said high frequency electric power from said high frequency electric power supply to the opposite surface to a surface of said first electrode facing said second electrode;

evacuation means for maintaining the interior of said chamber in a predetermined reduced pressure state; and

process gas feed means for feeding a process gas into said chamber,

wherein said feeding means comprises:

a feeding portion which is connected to said high frequency electric power supply;

a plurality of receiving terminal portions which are provided at positions other than the center on the surface of said first electrode facing said second electrode; and

a switching mechanism, one end of which is connected to said feeding portion and which is movable so as to be capable of feeding to each of said plurality of receiving terminal portions, for sequentially switching a receiving terminal portion of said receiving terminal portions for receiving said high frequency electric power from said high frequency electric power supply,

wherein said process gas is activated as plasma by said high frequency electric power to carry out a plasma processing.

Claim 9 (original): A plasma processing system as set forth in claim 8, wherein said switching mechanism comprises:

a plurality of receiving terminal plates which are connected to said plurality of receiving terminal portions, respectively;

a plurality of feeding terminal plates which are connected to said feeding portion and each of which is capable of passing directly above or below a corresponding one of said receiving terminal plates of said receiving terminal portions, each of said feeding terminal plates being capable of being electrostatic-coupled with a corresponding one of said receiving terminal plates when facing said corresponding one of said receiving terminal plates; and

a driving mechanism for moving said feeding terminal plates to sequentially position said feeding terminal plates directly above or below each of said receiving terminal plates of said receiving terminal portions.

Claim 10 (original): A plasma processing system as set forth in claim 9, wherein said feeding terminal plates are mounted on said switching mechanism, and said switching mechanism has a rotating member which is rotated by said driving mechanism, and wherein a high frequency electric power is fed to said feeding terminal plates via said rotating member.

Claim 11 (currently amended): A plasma processing system as set forth in claim 9 ~~or 10~~, which further comprises pressure reducing means for causing said switching mechanism to exist in a pressure reduced atmosphere.

Claim 12 (original): A plasma processing system as set forth in claim 9, wherein said plurality of receiving terminal plates connected to each of said receiving terminal portions are provided for each of said receiving terminal portions, and have a plurality of feeding

terminal plates so as to be electrostatic-coupled with said plurality of receiving terminal plates of each of said receiving terminal portions.

Claim 13 (original): A plasma processing system as set forth in claim 8, wherein said feeding portion is connected to said switching mechanism via mercury.

Claim 14 (original): A plasma processing system as set forth in claim 9, wherein the electrostatic capacity of an electrostatic coupling formed by each of said receiving terminal plates and a corresponding one of said feeding terminal plates is greater than the electrostatic capacity formed in said matching unit in series to said feeding member.

Claim 15 (withdrawn): A plasma processing system comprising:

- a chamber for housing therein a substrate to be processed;

- first and second electrodes which are provided in said chamber so as to face each other;

- a high frequency electric power supply for supplying a high frequency electric power to said first electrode;

- feeding means for feeding said high frequency electric power from said high frequency electric power supply to the opposite surface to a surface of said first electrode facing said second electrode;

- evacuation means for maintaining the interior of said chamber in a predetermined reduced pressure state; and

- process gas feed means for feeding a process gas into said chamber,

- wherein said feeding means comprises:

a plurality of receiving terminal portions which are provided at positions other than the center on the surface of said first electrode facing said second electrode;

a plurality of feeding lines for connecting said high frequency electric power supply to said receiving terminal portions; and

a switching mechanism for sequentially switching a receiving terminal portion of said receiving terminal portions for receiving said high frequency electric power from said high frequency electric power supply,

wherein said process gas is activated as plasma by said high frequency electric power to carry out a plasma processing.

Claim 16 (withdrawn): A plasma processing system as set forth in claim 15, wherein said switching mechanism comprises:

a plurality of switching elements, each of which is provided in a corresponding one of said plurality of feeding lines; and

control means for causing said switching elements to be sequentially turned on.

Claim 17 (withdrawn): A plasma processing system as set forth in claim 16, wherein each of said switching elements has a PIN diode.

Claim 18 (withdrawn): A plasma processing system as set forth in any one of claims 15 through 17, wherein said plurality of receiving terminal portions are arranged on circumferences which do not pass through the center on the opposite surface to the surface of said first electrode facing said second electrode.

Claim 19 (withdrawn): A plasma processing system as set forth in claim 18, wherein said plurality of receiving terminal portions are arranged at regular intervals on circumferences of predetermined radii, which are concentric with said first electrode, on the opposite surface to the surface of said first electrode facing said second electrode.

Claim 20 (withdrawn): A plasma processing system as set forth in claim 18, wherein a cycle for sequentially switching the feeding terminal portions arranged on said circumstances is 20 /min or more.

Claim 21 (previously presented): A plasma processing system as set forth in claim 8, wherein the number of said receiving terminal portions is at least three.

Claim 22 (canceled)

Claim 23 (currently amended): A plasma processing method for arranging a substrate to be processed, in a processing space between first and second electrodes provided so as to face each other, to supply a high frequency electric power through a feeding position to said first electrode while feeding a process gas into said processing space, to form plasma in said processing space to plasma-process said substrate, the feeding position being a single position with respect to the first surface;

wherein said first electrode has a first surface and has a second surface that is opposite to said first surface, thereof and faces said second electrode, ~~and~~

wherein the feeding position is moved on a ~~feeding plane~~ first surface when a high frequency electric power is fed to said first surface of said first electrode to form plasma, and.

wherein said moving mechanism substantially moves the feeding position of said feeding member on a circumference of a predetermined radius, which is concentric with said first electrode, on the first surface of said first electrode.

Claim 24 (cancelled)

Claim 25 (original): A plasma processing method as set forth in claim 24, wherein said feeding position moves at a moving speed of 20 rpm or higher.

Claim 26 (original): A plasma processing method for arranging a substrate to be processed, in a processing space between first and second electrodes provided so as to face each other, to supply a high frequency electric power to said first electrode while feeding a process gas into said processing space, to form plasma in said processing space to plasma-process said substrate,

wherein a plurality of receiving terminal portions are provided at positions other than the center on the opposite surface to the surface of said first electrode facing said second electrode, and a receiving terminal portion of said receiving terminal portions for receiving a high frequency electric power is sequentially switched when said high frequency electric power is fed to said first electrode to form plasma.

Claim 27 (original): A plasma processing method as set forth in claim 26, wherein said receiving terminal portions are arranged on circumferences, and said receiving terminal portions are sequentially switched at a speed of 20 rpm or higher.

Claim 28 (withdrawn): A plasma processing system as set forth in claim 15, wherein the number of said receiving terminal portions is at least three.

Claim 29 (new): A plasma processing system according to claim 1, wherein said feeding member comprises:

- a feeder plate which is provided so as to be spaced from the opposite surface to the surface of said first electrode facing said second electrode;

- a feeding member for feeding said high frequency electric power from said high frequency electric power supply to said first electrode, said feeding member being connected to said feeder plate at a position which is radially shifted from a position corresponding to the center of the opposite surface to the surface of said first electrode facing said second electrode; and

- a rotating mechanism for rotating said feeder plate to rotate the feeding position of said feeding member on the feeding plane of said first electrode,

- wherein said process gas is activated as plasma by said high frequency electric power to carry out a plasma processing.

Claim 30 (new): A plasma processing system as set forth in claim 1, wherein said feeding position moves on a circumference of a predetermined radius, which is concentric with

said first electrode, on the opposite surface to the surface of said first electrode facing said second electrode.

Claim 31 (new): A plasma processing system as set forth in claim 1, wherein said feeding position rotates at a rotational frequency of 20 rpm or more.

Claim 32 (new): A plasma processing system as set forth in claim 1, wherein said high frequency electric power supply is connected to said feeding member via mercury.

Claim 33 (new): A plasma processing system as set forth in claim 1, wherein the electrostatic capacitance of an electrostatic coupling formed by said first electrode and said feeder plate is greater than the electrostatic capacitance which is formed in said matching unit in series to said feeding member.

Claim 34 (new): A plasma processing system according to claim 1, wherein said feeding member comprises:

- a plurality of receiving terminal portions which are provided at positions other than the center on the surface of said first electrode facing said second electrode;

- a plurality of feeding lines for connecting said high frequency electric power supply to said receiving terminal portions; and

- a switching mechanism for sequentially switching a receiving terminal portion of said receiving terminal portions for receiving said high frequency electric power from said high frequency electric power supply,

wherein said process gas is activated as plasma by said high frequency electric power to carry out a plasma processing.

Claim 35 (new): A plasma processing system as set forth in claim 34, wherein said switching mechanism comprises:

a plurality of switching elements, each of which is provided in a corresponding one of said plurality of feeding lines; and

control means for causing said switching elements to be sequentially turned on.

Claim 36 (new): A plasma processing system as set forth in claim 35, wherein each of said switching elements has a PIN diode.

Claim 37 (new): A plasma processing system as set forth in claim 34, wherein said plurality of receiving terminal portions are arranged on circumferences which do not pass through the center on the opposite surface to the surface of said first electrode facing said second electrode.

Claim 38 (new): A plasma processing system as set forth in claim 37, wherein said plurality of receiving terminal portions are arranged at regular intervals on circumferences of predetermined radii, which are concentric with said first electrode, on the opposite surface to the surface of said first electrode facing said second electrode.

Claim 39 (new): A plasma processing system as set forth in claim 37, wherein a cycle for sequentially switching the feeding terminal portions arranged on said circumstances is 20 /min or more.

Claim 40 (new): A plasma processing system as set forth in claim 34, wherein the number of said receiving terminal portions is at least three.

Claim 41 (new): A plasma processing system as set forth in claim 34, wherein the number of said receiving terminal portions is at least three.